LIEBERT® vNSA™ Installation Sheet

Description

The Liebert vNSA network switch is designed for connecting multiple Ethernet-ready devices and comes in various models. The unit may have:

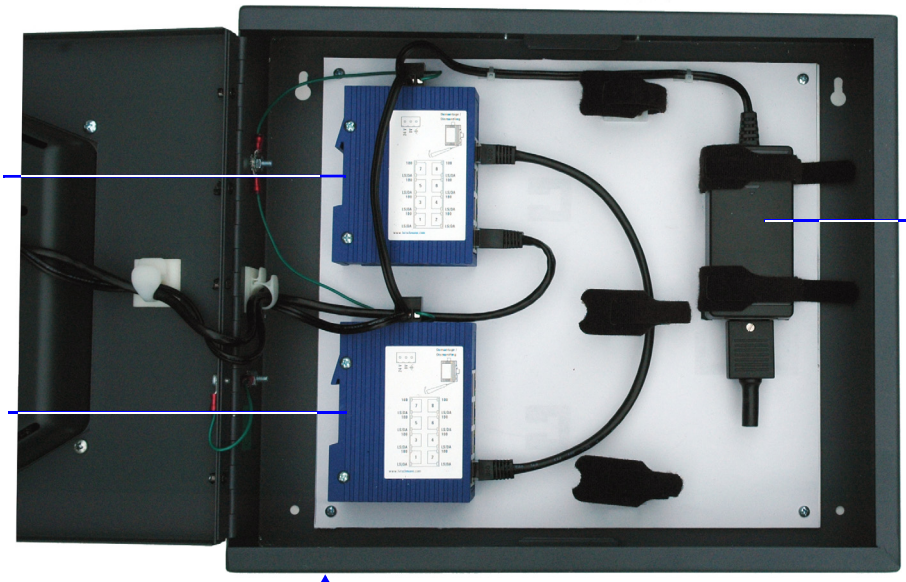
- A **Liebert iCOM® display** mounted on the front, as shown at right. Liebert iCOM models permit interconnecting cooling units that are equipped with Liebert iCOM controls, allowing the units to communicate.
- **One or two 8-port switches**, providing a total of 8 or 16 Ethernet ports. The example below shows a model with two 8-port switches.

The number of ports available varies by model (see **Table 1** for details).

All models have a **power supply** that requires connection, as shown below.

FRONT OF Liebert vNSA *(Liebert iCOM model shown)*

INSIDE VIEW
16-port model shown



Liebert iCOM Display	Model	Firmware / Liebert Products Supported			
Yes	vNSA8-iCOM vNSA16-iCOM	PA	Liebert DS™ Liebert CW™	Liebert Challenger™ 3000/ Liebert Challenger ITR™ with Liebert iCOM Control	Liebert HPM™ Liebert PeX™
	vNSA8-iCOM-CR vNSA16-iCOM-CR	CR	Liebert CRV™		
	vNSA8-iCOM-XP vNSA16-iCOM-XP	XP	Liebert XDP™ Liebert XDC™		
No	vNSA8	—	—		
	vNSA16				

Packing Contents

The Liebert vNSA comes standard with these components:

- Liebert iCOM display on front of enclosure *(Liebert iCOM models only)*
- One 8-port switch inside enclosure *(8-port models)*
  or
  Two 8-port switches inside enclosure *(16-port models)*
- Universal power supply and hardwire adapter
- Keys (2) to panel door lock
- User manual for Liebert vNSA
- User manual for industrial rail switch
- User manual for Liebert iCOM *(Liebert iCOM models only)*

Factory Connections

The Liebert vNSA has factory-wired connections to simplify installation, depending on the model (see **Figure 1**):

Models with Liebert iCOM display

- The upper switch is factory-connected to the Liebert iCOM display.

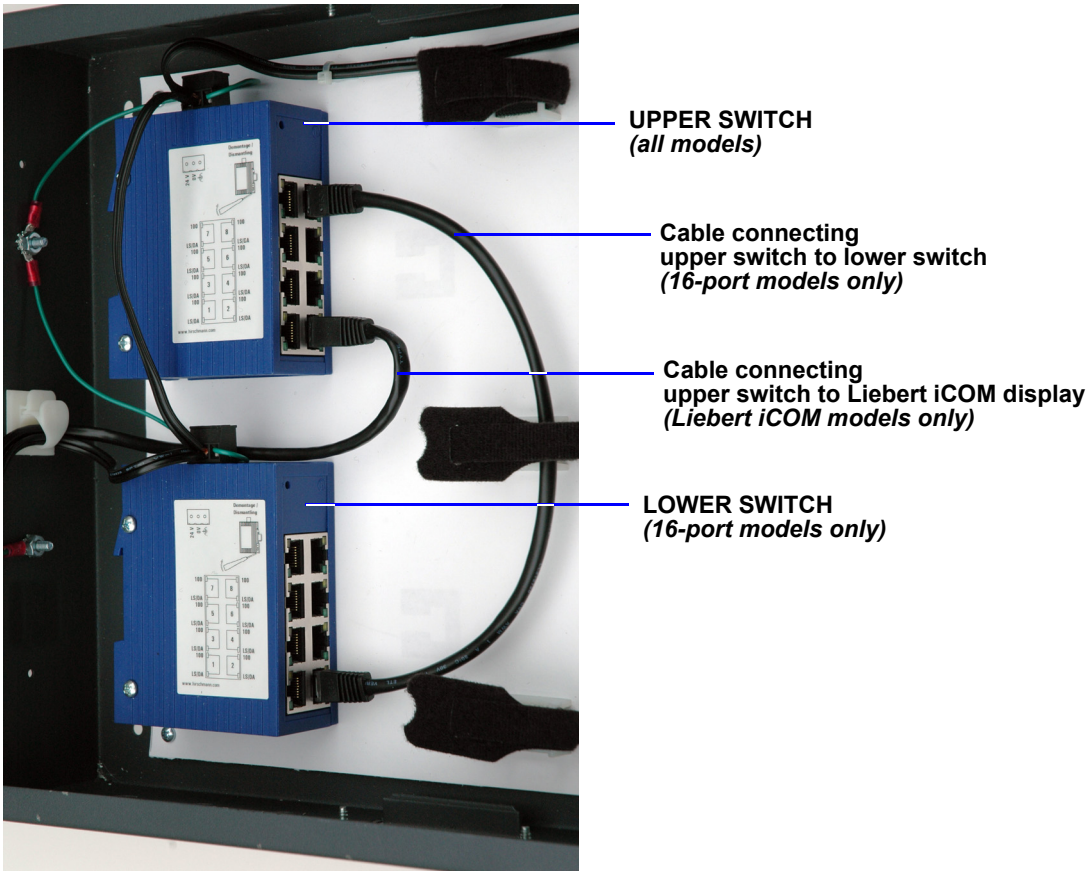
16-port models

- The upper switch is factory-connected to the lower switch.

All models

- Proper power connections are factory-wired between the 3-pin terminal blocks on each switch.

Figure 1 Factory-wired connections



Switches

Each switch has eight 10/100 Mbps twisted pair RJ45 ports, allowing connection of Ethernet-ready devices to available ports.

The switch supports Ethernet 10 Mbps and Fast Ethernet 100 Mbps using twisted-pair RJ45 ports, allowing connection of Ethernet-ready devices. The devices support switched Ethernet networks in accordance with IEEE standard 802.3.

Three automatic features—autonegotiation, autopolarity and autocrossing—allow the use of standard network cables (CAT5 or better) for connection to each port, rather than a special crossover cable. The switch detects and makes adjustments for the network's speed and transmission mode, polarity and transmit-and-receive pins. Refer to the Industrial Rail Switch user manual for more details.

Connecting Devices

Use CAT5 or better network patch cables with RJ45 connectors to connect devices to available ports.

Number of Ports Available

The **number of ports available** for Ethernet-ready devices varies by model, as shown in **Table 1**.

- Models with the Liebert iCOM display use one port for connection to the Liebert iCOM display.
- Models with two switches use two ports to interconnect the switches.

Table 1 Number of available ports by model

Liebert iCOM Display	Model	Total # Ports	# Ports Needed to Connect:		# Ports Available	Maximum # Cooling Units That May Be Connected	
			To Liebert iCOM Display	Upper & Lower Switches		Cooling Units With Small Liebert iCOM Display	Cooling Units With Large Liebert iCOM Display
Yes	vNSA8-iCOM	8	1	—	7	7 units	3 units
	vNSA8-iCOM-CR	8	1	—	7		
	vNSA8-iCOM-XP	8	1	—	7		
	vNSA16-iCOM	16	1	2	13	13 units	6 units
	vNSA16-iCOM-CR	16	1	2	13		
	vNSA16-iCOM-XP	16	1	2	13		
No	vNSA8	8	—	—	8	8 units	4 units
	vNSA16	16	—	2	14	14 units	7 units

Number of Cooling Units That May Be Connected

The **maximum number of cooling units that may be connected** depends on the Liebert vNSA model and the size of the Liebert iCOM display in the cooling units, as shown in **Table 1**.

Refer to the Liebert iCOM user manual for additional details on connecting Liebert cooling products.

Connect Power to the Liebert vNSA

The Liebert vNSA requires AC power (100-240VAC single phase) for proper operation. A universal power supply (12V, 1.5A) is installed inside the enclosure, with a hard-wired connection for 120V or 230V operation.

WARNING

Risk of electric shock. Can cause injury or death. Disconnect all local and remote electric power supplies before working within.

NOTICE

The Liebert vNSA is designed for use on properly grounded (earthed) 100-240VAC single-phase power, 50Hz or 60Hz. The ground wire for the power lead must be wired to the earth ground terminal (stud located next to the universal power supply).

This equipment is intended to be installed by a qualified and certified electrician who must review and approve customer supplied wiring and circuit breakers, verify correct input and grounded (earthed) connections to ensure compliance with technical standards and national and local electrical codes.

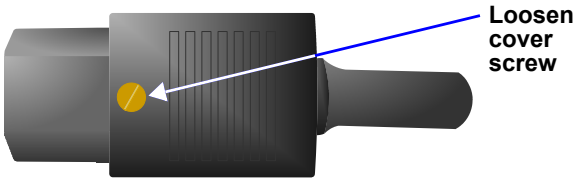
NOTE

The connector must be unplugged prior to installation.

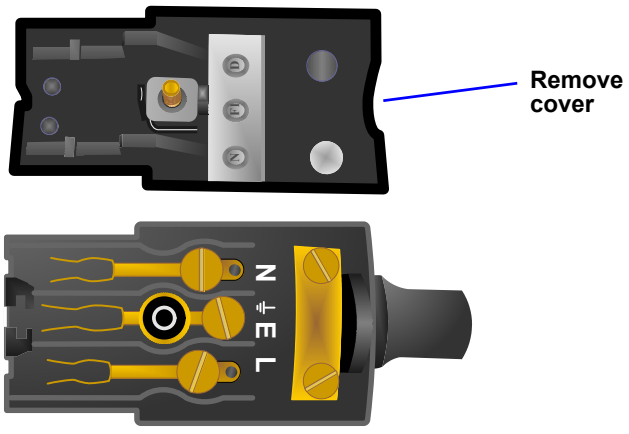
A field-supplied power cord may be used in place of the hardwire adapter provided.

Power Supply Wiring Instructions

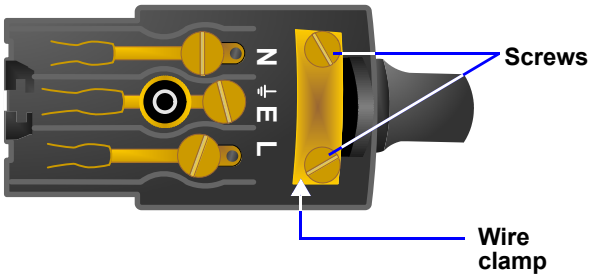
1. Loosen and remove the screw from the adapter cover.



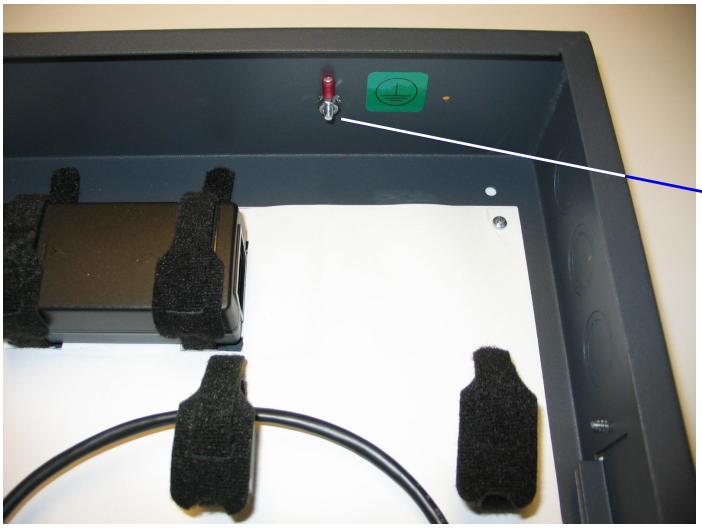
2. Remove the cover.



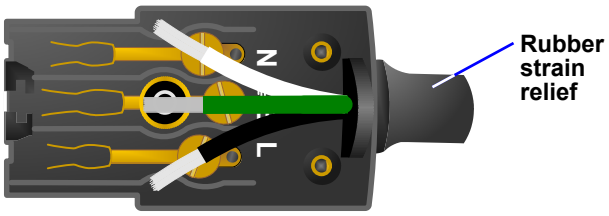
3. Loosen the two screws that secure the wire clamp. Remove the screws and the wire clamp.



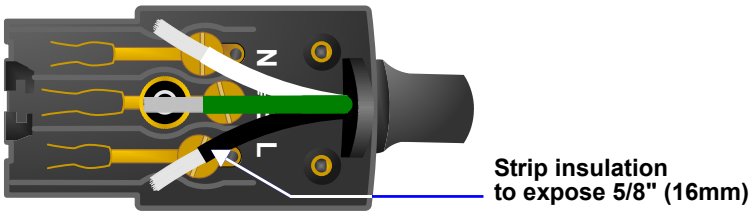
4. Connect the incoming electrical service ground wire to the earth ground terminal inside the enclosure, shown below.



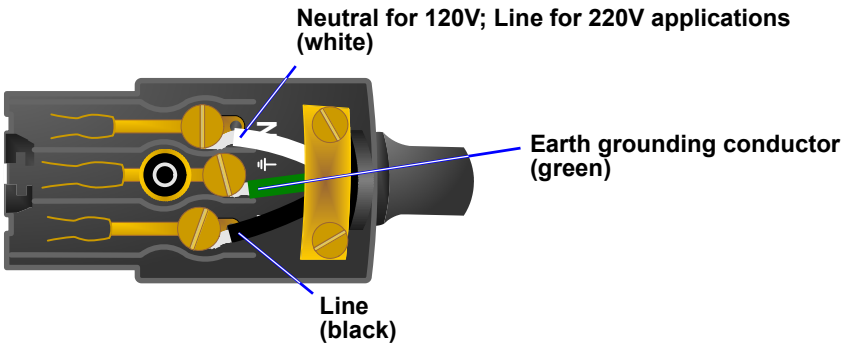
5. Feed wires—including a ground wire from the earth ground terminal in **Step 4**—through the rubber strain relief into the adapter. **Note:** 16 AWG stranded maximum wire size.



6. Strip the insulation on each wire to expose 5/8" (16mm).



7. Loop each wire around the appropriate terminating screw and tighten. Each screw is labeled:
   - N = Neutral for 120V; Line for 220V applications
   - E = Earth ground
   - L = Line



8. Replace the wire clamp and the two screws removed in **Step 3** to secure wires.
9. Close the adapter cover and tighten the screw from **Step 1**.

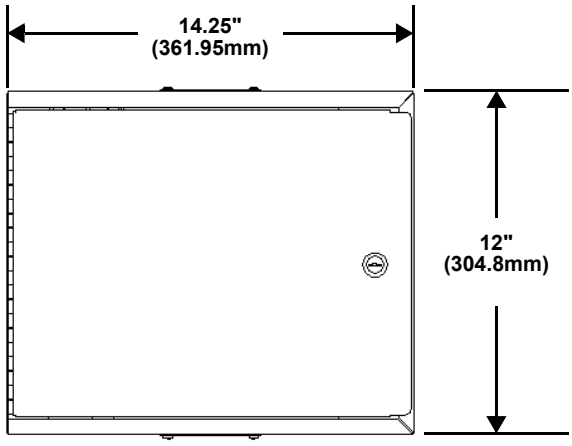
Enclosure

The Liebert vNSA enclosure features a key lock for added security. The enclosure is made of metal to accommodate secure conduit fittings and protect components against environmental debris.

The enclosure is designed for easy wire routing and terminations. Access slots for network cables and power wiring are located on both the top and bottom of the enclosure.

The enclosure is 3.3" (84mm) deep, allowing for recess mounting in a wall. The enclosure may also be surface-mounted.

The enclosure houses the power supply and one or two 8-port rail switches. Some models have a Liebert iCOM display mounted on the front of the enclosure.

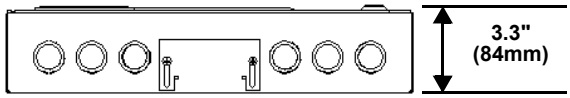


FRONT VIEW
(all models)

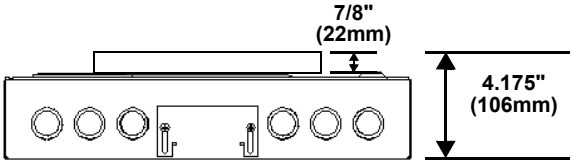
Enclosure Mounting Considerations

The Liebert vNSA must be installed indoors. The enclosure must be secured to a wall, either mounted on the surface of a wall or recessed with the front flush against a wall. The method of mounting depends on the application, the location of equipment to be monitored and the type of wall the enclosure will be mounted on.

- The Liebert vNSA should be mounted where it can be easily accessed.
- The site must have electrical service and must permit routing of network cables to the unit's RJ45 ports.
- The wall material must be capable of supporting the weight of the Liebert vNSA: see **Specifications on page 8**.



TOP/BOTTOM VIEW
(vNSA8 & vNSA16 models)



TOP/BOTTOM VIEW
(Liebert iCOM models)

Surface Mounting

NOTE

Removing the conduit knockouts before mounting the Liebert vNSA on the wall will ease installation and prevent strain on the mounting hardware and wall.

After determining where to place the enclosure, check to ensure that you have all the hardware required to install the panel on the surface of a wall. Obtain the needed tools and material.

Required Tools

- Electric drill (if surface is too hard to drive screws without pilot holes)
- Screwdriver
- Marker to denote layout of holes
- Four screws, each #10

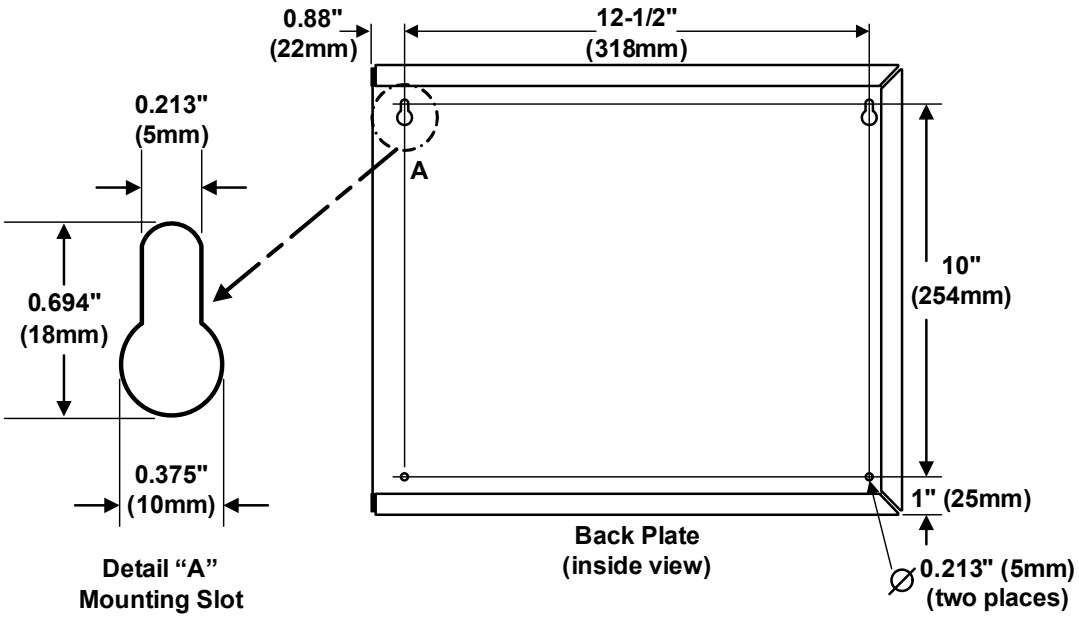
Mounting the Panel

NOTICE

Check building plans and other relevant documents to determine whether mounting the Liebert vNSA at the selected location might cause cutting or otherwise damaging electrical or communication wiring or pipes.

1. Mark the wall for mounting holes, using the back of the unit as a template (see **Figure 2**).

Figure 2 Mounting dimensions



2. Drill holes, if required, to install the four #10 screws that will secure the Liebert vNSA to the wall. Clean up the debris.
3. If the wall material is not strong enough to hold the screws securely, use wall anchors.
4. Install the top two screws—the screw heads must be small enough to slip through the larger, bottom portion of the pear-shaped mounting slot in the Liebert vNSA (see **Figure 2**). The screws must also be large enough to extend over the edges of the top of the mounting slot.
5. Hang the Liebert vNSA on the screws, letting the panel slip down until the screws are in the smaller, upper portion of the slot.
6. Tighten the screws until they are snug.
7. Insert the remaining two screws in the bottom holes on the back of the panel and tighten.

Specifications

MODEL	vNSA8-iCOM vNSA8-iCOM-CR vNSA8-iCOM-XP	vNSA16-iCOM vNSA16-iCOM-CR vNSA16-iCOM-XP	vNSA8 / vNSA16
Power	100-240VAC, single-phase, 47-63 Hz, 0.4A		
Dimensions, W x D x H - in. (mm)	14.25 x 3.3 x 12 (362 x 84 x 305)		
Weight - lb. (kg)	11 (5)		10 (4.5)
Enclosure Type	NEMA 1, painted steel IP20 - indoor use		
Mounting Surface	Building wall or structural member		
Communication	Ethernet 10/100 Mbps RJ45 ports, autonegotiation, autopolarity and autocrossing		
Ambient Operating Environment	32°F to 140°F (0°C to 60°C); 0 to 95% relative humidity, non-condensing.		

Wiring Specifications

Connection	Supported Wire Types	Maximum Wire Length	Rating
Ethernet 10/100 Mbps	CAT 5 RJ45 Ethernet cable	328 ft. (100m)	N/A
Universal power supply	16 AWG Stranded	Contact local electrician	300V

Ordering Information

Quantity	Part #	Liebert vNSA with:	Firmware / Liebert Products Supported			
	vNSA8-iCOM	8 ports, Liebert iCOM display	PA	Liebert DS Liebert CW	Liebert Challenger series	Liebert HPM Liebert PeX
	vNSA16-iCOM	16 ports, Liebert iCOM display				
	vNSA8-iCOM-CR	8 ports, Liebert iCOM display	CR	Liebert CRV		
	vNSA16-iCOM-CR	16 ports, Liebert iCOM display				
	vNSA8-iCOM-XP	8 ports, Liebert iCOM display	XP	Liebert XDP Liebert XDC		
	vNSA16-iCOM-XP	16 ports, Liebert iCOM display				
	vNSA8	8 ports	—	—		
	vNSA16	16 ports				

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